

B.) REMARKS

This Response is filed in response to the Office Action dated August 9, 2006.

Upon entry of this Response, claims 1-28 will be pending in the Application.

In the outstanding Office Action, the Examiner withdrew from consideration claims 3-14 and 17-28; rejected claims 1, 2, 15 and 16 under 35 U.S.C. 102(b) as being anticipated by Massie (U.S. Patent No. 5,409,356); and rejected claims 1, 2, 15 and 16 under 35 U.S.C. 102(b) as being anticipated by Poliansky (U.S. Patent No. 2,732,124).

Rejection under 35 U.S.C. 102

a. Rejection of claims as being anticipated by Massie

The Examiner rejected claims 1, 2, 15 and 16 under 35 U.S.C. 102(b) as being anticipated by Massie (U.S. Patent No. 5,409,356), hereinafter referred to as "Massie."

Specifically, the Examiner stated that

Massie discloses reciprocating compressor (column 1, lines 8+) comprising a linear motor (Figure 1, item 10); at least one piston and cylinder arrangement (Figure 1, item 17), the piston and cylinder arrangement comprising a cylinder, a piston configured and disposed to travel in the cylinder and a piston rod connected to the piston, and a mechanism (Figure 1, item 12) operatively connecting the linear motor to the at least one piston and cylinder arrangement to move the piston in the cylinder upon operation of the linear motor, the mechanism having a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder (See note 1); wherein the mechanism comprises a connecting rod (not labeled; however clearly seen in Figure 1) and eccentric (See note 2).

(Note:

- 1.) Examiner is interpreting "a mechanical configuration between a motor and a piston to limit overtravel and undertravel of the piston in the cylinder", as being any mechanical linkage that is used to attach the motor to the piston.
- 2.) Eccentric is being interpreted as being the connector between 14 and 12 of Figure 1

End Note)

Applicants respectfully traverse the rejection of claims 1, 2, 15 and 16 under 35 U.S.C. 102(b).

Massie, as understood, is directed to a well pumping system with a linear induction motor device. The linear induction motor is used to reciprocate the oil well rocker arm and then operate as a generator on the reverse stroke to reduce the chock loading. In addition, the generated electrical energy is returned to the well pumping system. This greatly reduces the maintenance costs of a conventional oil well and provides greater efficiency of the well pumping system.

In contrast, independent claim 1 recites a reciprocating compressor including a linear motor and at least one piston and cylinder arrangement having a cylinder. The piston is configured and disposed to travel in the cylinder with a piston rod connected to the piston. A mechanism operatively connecting the linear motor to the at least one piston and cylinder arrangement moves the piston in the cylinder upon operation of the linear motor, and the mechanism has a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder.

In addition, independent claim 15 recites a mechanism to connect a linear motor to a piston-cylinder arrangement, the mechanism having a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder.

The examiner is reminded that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.’ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).’ See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2131.

In addition, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.’ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).’ See MPEP, Section 2131.

Several of the features recited by Applicant in independent claims 1 and 15 are not taught or suggested by Massie. First, Massie does not teach or suggest a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder as recited by Applicant in

independent claims 1 and 15. The Examiner states that in Note 1 that the Examiner interprets "a mechanical configuration between a motor and a piston to limit overtravel and undertravel of the piston in the cylinder" as being any mechanical linkage that is used to attach the motor to the piston. However, this interpretation is incorrect. Any mechanical linkage that is used to attach the motor to the piston does not possess the characteristics to limit overtravel and undertravel of the piston in the cylinder as Applicant recites in independent claims 1 and 15. A connecting mechanism can serve many purposes, and not necessarily limit the overtravel and undertravel of the piston in the cylinder. For example, the connecting rod used in Massie may be a connecting mechanism, but nowhere in Massie is it taught or suggested that the connecting rod is used to limit the overtravel and undertravel of the piston in the cylinder as Applicant recites in independent claims 1 and 15. In fact, the connecting rod in Massie is not even labeled or mentioned as having a special purpose or characteristic for being configured to limit the overtravel and undertravel of the piston in the cylinder. Simply because a connecting rod is present in a figure does not mean the connecting rod serves the same purpose as specific as limiting overtravel and undertravel of the piston in the cylinder as recited by Applicant in independent claims 1 and 15. Applicant recites that the mechanism in the present invention prevents overextension during light loads and underextension during heavy loads. In addition, Applicant recites the mechanism as providing a constant predetermined top dead center piston position and bottom dead center piston position to limit or eliminate overtravel and undertravel of the piston in the cylinder (*See paragraph [0015]*). Applicant cannot find in Massie language that teaches or suggests a mechanical linkage that is used to attach the motor to the piston to limit overtravel and undertravel of the piston in the cylinder. Further, Applicant cannot find in Massie language that teaches or suggests the connecting rod in Massie as limiting the overtravel and undertravel of the piston in the cylinder.

Thus, since Massic does not teach or suggest all of the limitations recited in independent claims 1 and 15, Applicant respectfully submits that Massie does not anticipate Applicant's invention as recited in independent claims 1 and 15.

Therefore, for the reasons given above, independent claims 1 and 15 are believed to be distinguishable from Massic and therefore are not anticipated nor rendered obvious by Massic.

Dependent claims 2 and 16 are believed to be allowable as depending from what are believed to be allowable independent claims 1 and 15 for the reasons given above. In addition, claims 2 and 16 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 1, 2, 15 and 16 are not anticipated nor rendered obvious by Massie and are therefore allowable.

b. Rejection of claims as being anticipated by Poliansky

The Examiner rejected claims 1, 2, 15 and 16 under 35 U.S.C. 102(b) as being anticipated by Poliansky (U.S. Patent No. 2,732,124), hereinafter referred to as "Poliansky."

Specifically, the Examiner stated that

Poliansky discloses reciprocating compressor comprising: a linear motor (column 4, lines 1+) at least one piston (Figure 2, item 8) and cylinder arrangement (Figure 1, item 2), the piston and cylinder arrangement comprising a cylinder, a piston configured and disposed to travel in the cylinder and a piston rod connected to the piston; and a mechanism (Figure 1, item 18) operatively connecting the linear motor to the at least one piston and cylinder arrangement to move the piston in the cylinder upon operation of the linear motor, the mechanism having a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder; wherein the mechanism comprises a connecting rod (Figure 1, item 11) and eccentric (see note).

(Note:

1.) Examiner is interpreting "a mechanical configuration between a motor and a piston to limit overtravel and undertravel of the piston in the cylinder", as being any mechanical linkage that is used to attach the motor to the piston

2.) Eccentric is being interpreted as being the connector between 18 and the base of Figure 1.

End Note)

Applicants respectfully traverse the rejection of claims 1, 2, 15 and 16 under 35 U.S.C. 102(b).

Poliansky, as understood, is directed to an air or gas compressor having at least one pair of compressor heads combined, within one casing, with an electric means for driving the pistons of the compressor heads. The compressor has linear movements of at least one armature attracted alternately by two electro-magnets. The main object of the inventions is to provide an improved gas compressor, where two electro magnets are used for operating the pistons of at least one pair of compressor heads, which the result that the usually employed electric motor and crank may be dispensed with and that the compressor structure is considerably simplified.

In contrast, independent claim 1 recites a reciprocating compressor including a linear motor and at least one piston and cylinder arrangement having a cylinder. The piston is configured and disposed to travel in the cylinder with a piston rod connected to the piston. A mechanism operatively connecting the linear motor to the at least one piston and cylinder arrangement moves the piston in the cylinder upon operation of the linear motor, and the mechanism has a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder.

In addition, independent claim 15 recites a mechanism to connect a linear motor to a piston-cylinder arrangement, the mechanism having a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder.

The examiner is reminded that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).” See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2131.

In addition, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).” See MPEP, Section 2131.

Several of the features recited by Applicant in independent claims 1 and 15 are not taught or suggested by Poliansky. First, Poliansky does not teach or suggest a mechanical configuration to limit overtravel and undertravel of the piston in the cylinder as recited by Applicant in independent claims 1 and 15. The Examiner states that in Note 1 that the Examiner interprets “a

mechanical configuration between a motor and a piston to limit overtravel and undertravel of the piston in the cylinder" as being any mechanical linkage that is used to attach the motor to the piston. However, this interpretation is incorrect. Any mechanical linkage that is used to attach the motor to the piston does not possess the characteristics to limit overtravel and undertravel of the piston in the cylinder. A connecting mechanism can serve many purposes, and not necessarily limit the overtravel and undertravel of the piston in the cylinder. For example, the piston rod used in Poliansky may be a connecting mechanism, but nowhere in Poliansky is it taught or suggested that the piston rod is used to limit the overtravel and undertravel of the piston in the cylinder as Applicant recites in independent claims 1 and 15. In fact, the piston rods used in Poliansky are taught to only extend through the central perforation of a disc removeably secured to the lower open end of the hollow piston (*See Poliansky, Col. 3, lines 34-37*). Poliansky does not teach or suggest the use of the piston rod as limiting the overtravel and undertravel of the piston in the cylinder. Simply because a piston rod is present, does not mean that the overtravel and undertravel of the piston in the cylinder is limited as recited by Applicant in independent claims 1 and 15. The mechanism in the present invention is recited to prevent overextension during light loads and underextension during heavy loads. In addition, Applicant recites the mechanism providing a constant predetermined top dead center piston position and bottom dead center piston position to limit or eliminate overtravel and undertravel of the piston in the cylinder (*See paragraph [0015]*). Applicant cannot find in Poliansky language that teaches or suggests a mechanical linkage that is used to attach the motor to the piston to limit overtravel and undertravel of the piston in the cylinder. Further, Applicant cannot find in Poliansky language that teaches or suggests the piston rod in Poliansky as limiting the overtravel and undertravel of the piston in the cylinder.

Thus, since Poliansky does not teach or suggest all of the limitations recited in independent claims 1 and 15, Applicant respectfully submits that Poliansky does not anticipate Applicant's invention as recited in independent claims 1 and 15.

Therefore, for the reasons given above, independent claims 1 and 15 are believed to be distinguishable from Poliansky and therefore are not anticipated nor rendered obvious by Poliansky.

Dependent claims 2 and 16 are believed to be allowable as depending from what are believed to be allowable independent claims 1 and 15 for the reasons given above. In addition, claims 2 and 16 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 1, 2, 15 and 16 are not anticipated nor rendered obvious by Poliansky and are therefore allowable.

CONCLUSION

In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding objections and rejections. As a result of the amendments and remarks presented herein, Applicant respectfully submits that claims 1, 2, 15 and 16 are not anticipated by nor rendered obvious by Massie or Poliansky and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of claims 1, 2, 15 and 16 in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

The Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 50-1059.

Respectfully submitted,
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